



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

K8

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,727	05/03/2001	Vincent Jen-Jr. Gau	5876P002	8418

7590 06/09/2005

LAW OFFICES OF TRAVIS L. DODD
A PROFESSIONAL CORPORATION
2490 HEYNEMAN HOLLOW
FALLBROOK, CA 92028

EXAMINER

TRAN, MY CHAU T

ART UNIT	PAPER NUMBER
1639	

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/848,727	GAU, VINCENT JEN-JR.	
	Examiner MY-CHAU T TRAN	Art Unit 1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 08 April 2005.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 83-95,98-104,108 and 112-123 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 83-95,98-104,108 and 113-122 is/are rejected.
- 7) Claim(s) 112 and 123 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 17 November 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/17/2004 has been entered.

Status of Claims

2. Applicant's amendment filed 12/17/2004 is acknowledged and entered. Claims 96, 97, 105-107, and 109-111 have been canceled. Claims 83-86, 95, 98, 102-104, 108, and 112 have been amended. Claims 114-123 have been added.

3. Claims 1-20, 51-52, and 75-82 were canceled and Claims 83-113 were added by the amendment filed on 06/28/2004.

4. Claims 53-74 were canceled and Claims 75-82 were added by the amendment filed on 11/13/2003.

5. Claims 21-50 were canceled; Claims 1, and 3-20 were amended; and Claims 51-74 were added by the amendment filed on 05/05/2003.

6. Claims 83-95, 98-101, 108, and 112-123 are pending.

Priority

7. This application claims benefit to a provisional application under 35 U.S.C 119(e). The provisional application is 60/201,603 filed 05/03/2000.
8. Claims 83-95, 98-101, 108, and 112-123 are treated on the merit in this Office Action.

New Rejection(s) – Necessitated by Amendment

Claim Objections

9. Claim 112 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim limitation of claim 112, i.e. "*wherein the sensor consists of the working electrode, counter electrode and reference electrode positioned on the substrate*", is the same as the limitation of claim 83, i.e. "*the sensor including a working electrode, a reference electrode, and a counter electrode positioned on the substrate*". Thus, claim 112 is objected to as being of improper dependent form for failing to further limit the subject matter of a previous claim 83.

10. Claim 123 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the

claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim limitation of claim 123, i.e. "*employing the potential to determine the presence or quantity of the target analyte in the sample*", is similar to the limitation of claim 83, i.e. "*employing the measured current to determine the presence or quantity of a target analyte in the sample*". Thus, claim 123 is objected to as being of improper dependent form for failing to further limit the subject matter of a previous claim 83.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 83-95, 98-101, 108, and 112-123 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The limitation of "*controlling a potential difference between the reference electrode and the working electrode while measuring a current flowing through the working electrode*" is vague and indefinite because it unclear as to the correlation between this limitation and the limitations of "*wherein the potential is controlled so as to cause a redox reaction between a component in the sample and the working electrode, and the current through the working electrode is balanced by a current through the counter electrode*", i.e. the potential difference is between the counter electrode and the working electrode since "*the current through the working electrode is balanced by a current through the counter electrode*". Thus, it is unclear as to "*controlling a potential*

difference between the reference electrode and the working electrode" when the potential difference is between the counter electrode and the working electrode.

b. Claims 119, and 120 recite the limitation "a self-assembly monolayer" in line 1.

There is insufficient antecedent basis for this limitation in the claim 83 since claim 83 does not recite the limitation "a self-assembly monolayer".

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. *The instant invention recites the method of detecting the presence or measuring the quantity of a target analyte in a sample reagent. The method comprises the step of 1) positioning the sample on a sensor; 2) conducting an analysis of the sample that includes controlling a potential difference between the reference electrode and the working electrode while measuring a current flowing through the working electrode wherein the potential is controlled so as to cause a redox reaction between a component in the sample and the working electrode, and the current through the working electrode is balanced by a current through the counter electrode; and 3) employing the measured current to determine the presence or quantity of a target analyte in the sample. The sensor includes a working electrode, a reference electrode, and a counter electrode on a substrate. The reference electrode consists of a single layer of an electrically conductive material. The method step of conducting an analysis is interpreted as controlling the potential difference between the counter electrode and the working electrode.*

15. Claims 83, 85-87, 93, 98, 99, 100, 101, 104, 112, 115, 118, and 121-123 are rejected under 35 U.S.C. 102(b) as being anticipated by Weetall (US Patent 4,963,245).

Weetall discloses a sensor apparatus for measuring the redox reaction occurring on the surface of the electrode array and the method for performing an immunoassay of an analyte on the sensor apparatus (see e.g. Abstract; col. 1, lines 8-12, and 46-68; claim 1). The sensor apparatus comprises a planar support with a plurality of wells (refers to instant claim 93) or without wells, i.e. with define sampling area (see e.g. col. 2, lines 45-51; figs 3 and 4); each well/sampling area comprises a working electrode, counter electrode, and reference electrode (refers to instant claimed working electrode, counter electrode, and reference electrode; and claim 112); and an ammeter to control and monitor the electrodes in the wells/sampling area (refers to instant claim 115) (see e.g. col. 1, lines 56-62; col. 2, lines 24-66; fig. 1-2, and 5; claim 1). Figures 3 and 4 disclose the arrangement of the electrodes on the support wherein the working electrode (ref. #22) is in the center and the counter electrode (ref. #26), and reference electrode (ref. # 24) are at the perimeter of the working electrode (refers to instant claims 99, 100, 121 and 122). The material for the support includes glass, and plastic polymer (refers to instant claim 87) (see e.g. col. 2, lines 26-29). The electrodes are graphite electrodes (refers to instant claimed limitation of "*the reference electrode consists of a single layer of an electrically conductive material*", and claims 101 and 118) (see e.g. col. 2, lines 38-42). The sample includes biological sample and in liquid form (refers to claims 85 and 86) (see e.g. col. 1, lines 63-68; col. 3, lines 4-13). Additionally, a sensor activating chemical attached to the working electrode that include a first conjugate wherein it is a specific binding partner to the analyte of interest (refers to instant claim 98) (see e.g. col. 4, lines 55-60).

The method comprises the steps of a) introducing into the well/sampling area the sample containing the analyte, (refers to the instant claimed step (1); b) applying a potential between the

working electrode and counter electrode (refers to instant claimed step (2)); c) measuring the current between the working electrode and counter electrode and determining the amount of analyte (refers to instant claimed step (2)); and d) determining the amount of the analyte in the test sample from the measurement of the current in step (c) relative to the preselected potential in step (b) (refers to the instant claimed step (3), and claim 123) (see e.g. col. 1, lines 53-55; col. 2, col. 3, line 18 to col. 4, line 33; claim 1). Thus, the sensor apparatus and the method of using the sensor apparatus of Weetall anticipate the presently claimed method.

16. Claims 83, 85-90, 94, 98-101, 103, 108, 112-120, and 123 are rejected under 35 U.S.C. 102(e) as being anticipated by Choong et al. (US Patent 6,518,024).

Choong et al. disclose an apparatus and methods for detecting single base extension to an oligonucleotide using electrochemical redox labels (see e.g. Abstract; col. 1, lines 7-16; col. 3, lines 25-31; col. 9, lines 17-22). The apparatus comprises a supporting substrate, a plurality of first electrodes (refers to instant claimed working electrode) in contact with the supporting substrate, a plurality of conjugated polymer (refers to claims 119 and 120) in contact with the plurality of first electrode wherein probes are immobilized, a counter electrode, and a reference electrode (see e.g. col. 5, line 15 thru col. 6, line 41; col. 7, lines 30-40). The substrate comprises materials such as silicon, glass, plastic, and ceramic (refers to instant claim 87) (see e.g. col. 5, lines 54-58). The first electrode comprises materials such as gold, titanium, and platinum (refers to claims 89, 90, 101, and 118) (see e.g. col. 5, line 59 thru col. 6, line 3). The counter electrode comprises materials such as gold, titanium, and platinum (refers to claims 89, 90, 101, and 118) (see e.g. col. 5, line 59 thru col. 6, line 3; col. 7, lines 29-40). The reference electrode comprises

materials such as silver wire refers to instant claimed limitation of “*the reference electrode consists of a single layer of an electrically conductive material*”, and claims 101 and 118).

Additionally, the electrodes are connected to a power source and a means for controlling the power source. The substrate has a surface area of between 0.01 μm^2 and 5 cm^2 (refers to instant claim 113) (see e.g. col. 6, lines 12-26). The detection method includes amperometric and cyclic voltammetry (refers to instant claims 114-117) (see e.g. col. 4, lines 5-14; col. 10, lines 10-41).

The method comprises a) contacting the sample to the plurality of first electrodes, b) adding the reagent comprising the electrochemical redox labels, c) detecting the presence of the electrochemical redox labels to identify the base extension (see e.g. col. 4, lines 39-53; col. 8, lines 9-35; col. 10, lines 10-41). The detection step includes controlling the current flow between two electrodes (see e.g. col. 7, lines 41-50; col. 17-30). Thus, the apparatus and method of Choong et al. anticipated the presently claimed invention.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. *The instant invention recites the method of detecting the presence or measuring the quantity of a target analyte in a sample reagent. The method comprises the step of 1) positioning the sample on a sensor; 2) conducting an analysis of the sample that includes controlling a potential difference between the reference electrode and the working electrode while measuring a current flowing through the working electrode wherein the potential is controlled so as to cause a redox reaction between a component in the sample and the working electrode, and the current through the working electrode is balanced by a current through the counter electrode;*

and 3) employing the measured current to determine the presence or quantity of a target analyte in the sample. The sensor includes a working electrode, a reference electrode, and a counter electrode on a substrate. The reference electrode consists of a single layer of an electrically conductive material. The method step of conducting an analysis is interpreted as controlling the potential difference between the counter electrode and the working electrode.

19. Claims 83, 85-87, 93, 95, 98, 99, 100, 101, 104, 112, 115, 118, and 121-123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weetall (US Patent 4,963,245) and Han et al. (US Patent 6,268,161 B1).

Weetall discloses a sensor apparatus for measuring the redox reaction occurring on the surface of the electrode array and the method for performing an immunoassay of an analyte on the sensor apparatus (see e.g. Abstract; col. 1, lines 8-12, and 46-68; claim 1). The sensor apparatus comprises a planar support with a plurality of wells (refers to instant claim 93) or without wells, i.e. with define sampling area (see e.g. col. 2, lines 45-51; figs 3 and 4); each well/sampling area comprises a working electrode, counter electrode, and reference electrode (refers to instant claimed working electrode, counter electrode, and reference electrode; and claim 112); and an ammeter to control and monitor the electrodes in the wells/sampling area (refers to instant claim 115) (see e.g. col. 1, lines 56-62; col. 2, lines 24-66; fig. 1-2, and 5; claim 1). Figures 3 and 4 disclose the arrangement of the electrodes on the support wherein the working electrode (ref. #22) is in the center and the counter electrode (ref. #26), and reference electrode (ref. # 24) are at the perimeter of the working electrode (refers to instant claims 99, 100, 121 and 122). The material for the support includes glass, and plastic polymer (refers to instant claim 87) (see e.g. col. 2, lines 26-29). The electrodes are graphite electrodes (refers to instant claimed limitation of "*the reference electrode consists of a single layer of an electrically conductive material*", and claims 101 and 118) (see e.g. col. 2, lines 38-42). The sample

includes biological sample and in liquid form (refers to claims 85 and 86) (see e.g. col. 1, lines 63-68; col. 3, lines 4-13). Additionally, a sensor activating chemical attached to the working electrode that include a first conjugate wherein it is a specific binding partner to the analyte of interest (refers to instant claim 98) (see e.g. col. 4, lines 55-60).

The method comprises the steps of a) introducing into the well/sampling area the sample containing the analyte, (refers to the instant claimed step (1); b) applying a potential between the working electrode and counter electrode (refers to instant claimed step (2)); c) measuring the current between the working electrode and counter electrode and determining the amount of analyte (refers to instant claimed step (2)); and d) determining the amount of the analyte in the test sample from the measurement of the current in step (c) relative to the preselected potential in step (b) (refers to the instant claimed step (3), and claim 123) (see e.g. col. 1, lines 53-55; col. 2, col. 3, line 18 to col. 4, line 33; claim 1).

The method of Weetall differs from the presently claimed invention by failing to include the calibration step comprising using two different calibration solutions.

Han et al. disclosed a biosensor for measuring the concentration of organic molecules in a solution (see e.g. col. 1, lines 16-17). Han et al. claim a method of using the biosensor that included a calibration step (see e.g. col. 12, lines 33-35; col. 16, claim 20). The claim method step includes a control solution (calibration solution) and obtaining a signal. Additionally, the system can be recalibrated by using a calibration solution with unknown amount of analyte (see e.g. col. 12, lines 60-62).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the calibration step comprising using two different calibration

solutions as taught by Han et al. in the method of Weetall. One of ordinary skill in the art would have been motivated to include the calibration step comprising using two different calibration solutions in the method of Weetall for the advantage of determining the performance of the electrode before the analysis of the sample (Han: col. 12, lines 34-36) since both Weetall and Han et al. disclose a glucose electrode sensor (Weetall: col. 12-15; Han: col. 1, lines 16-21). Furthermore, one of ordinary skill in the art would have reasonably expectation of success in the combination of Weetall and Han et al. because the calibration step is necessary to ensure the working order of the electrode.

20. Claims 83-94, 99-101, 103, 108, 112, 114-118, and 123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buck, Jr. et al. (US Patent 6,294,062 B1; *filings date of 6/1/1998*) and Glass et al. (US Patent 5,120,421).

Buck, Jr. et al. teaches immunosensors based on direct electrochemical measurement of detectable species with microarray electrodes under bipotentiostatic control and the method of detecting biological analytes in a liquid sample using the immunosensors (see e.g. Abstract; col. 1, lines 60-62; col. 3, lines 43-61; col. 4, lines 11-24). The method comprises the claimed step of 1) positioning the sample reagent on a biosensor (see e.g. col. 4, lines 27-31; col. 6, lines 49-53); 2) controlling a potential difference between two of the electrodes (see e.g. col. 4, lines 35-41; col. 6, lines 59-67; col. 7, lines 3-10); 3) measuring an electrical signal from the biosensor so as to determine the presence and/or quantity of the target analyte in the sample reagent (see e.g. col. 4, lines 41-50; col. 7, lines 1-2, and 11-15). The method of Buck, Jr. et al. further discloses the instant claimed method step of controlling the potential difference is between the reference

electrode and the working electrode, and the application of the current is through the counter electrode (see e.g. col. 8, lines 51-61). The liquid sample is a biological fluid (refers to instant claims 85-86 and 103) (see e.g. col. 7, lines 27-36). The immunosensors comprises the electrode structure that includes a reference electrode, working electrode and an auxiliary electrode for current control (refers to instant claimed biosensor and instant claims 108) (see e.g. col. 43-61; col. 7, lines 65-66; col. 8, line 54-55). The electrode is on a silicon substrate with a layer of chromium, and comprise of gold (refers to instant claims 84, 87-92, 94, 99, 101, and 112) (see e.g. col., lines 26-40). The electrode structure is formed on an inner surface of a chamber for receiving the liquid sample (refers to instant claim 93) (see e.g. col. 8, lines 41-45). The electrode structure also is in contact with conductors (refers to claim 100) (see e.g. col. 49-50).

The apparatus and method of Buck, Jr. et al. differs from the presently claimed invention by failing to modifying the reference electrode to comprise a single layer of electrically conductive material and include a cyclic voltammetry.

Glass et al. disclose an electrochemical detection system and the method of making it (see e.g. Abstract; col. 1, 12-20; col. 3, lines 38-65; col. 4, lines 34-43). The electrochemical detection system comprises a plurality of electrodes on a flat wafer wherein the electrodes include a working electrode, an auxiliary electrode, and/or reference electrode (see e.g. col. 6, line 49 thru col. 7, line 10; col. 8, lines 3-47; col. 8, line 48 thru col. 9, line 2; col. 9, lines 30-45). The type of material use for each electrode includes platinum and gold (see e.g. col. 8, lines 3-47; col. 14, line 48 thru col. 15, line 19). The wafer comprises of material such as silicon or ceramic (see e.g. col. 9, lines 10-20; col. 10, line 31-33; col. 14, lines 48-50). A layer of chromium or niobium is deposited on the wafer before deposit of the electrode material in order

to increase the adhesion of the electrode material (see e.g. col. 10, lines 60-64; col. 14, lines 48-50). The system is equipped to perform cyclic voltammetry (see e.g. col. 5, lines 33-41).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modifying the reference electrode to comprise a single layer of electrically conductive material and include a cyclic voltammetry as taught by Glass et al. in the apparatus and method of Buck, Jr. et al. One of ordinary skill in the art would have been motivated to modifying the reference electrode to comprise a single layer of electrically conductive material and include a cyclic voltammetry in the apparatus and method of Buck, Jr. et al. for the advantage of providing a detector has a high signal-to-noise ratio and improved selectivity since both Buck, Jr. et al. and Glass et al. disclose the method of using an electrochemical detection system for the detection of chemical compounds in solution and in natural environment (Buck: col. 1, lines 60-62; Glass: col. 3, lines 54-58). Furthermore, one of ordinary skill in the art would have reasonably expectation of success in the combination of Buck, Jr. et al. and Glass et al. because Glass et al. disclose the success of depositing a single layer of metal onto support by example (col. 14, line 48 thru col. 15, line 19).

Withdrawn Objection(s) and/or Rejection(s)

21. The objections of claims 96, 97, 107, and 108 have been withdrawn in light of applicant's amendments of claim 108, and cancellation of claims 96, 97, and 107.

22. The rejections of claims 83-113 under 35 USC 112, first paragraph (new matters) have been withdrawn in light of applicant's amendments of claims 83, and 102, and cancellation of claim 107.

23. The rejections of claims 83-112 under 35 USC 112, second paragraph, as being indefinite have been withdrawn in light of applicant's amendments of claims 83, 102, 104, and 108, and cancellation of claims 106, and 111.

24. The rejection of claims 83-94, 96-101, 103, 108-110 and 112 under 35 USC 102(b) as being anticipated by Song et al. (US Patent 5,567,302) has been withdrawn in light of applicant's amendments of claims 83, 104, 108, and 112, and cancellation of claims 96, 97, 105, and 109.

25. The rejection of claims 83-91, 93-94, 96-101, 103-105, 108-109 and 112 under 35 USC 102(b) as being anticipated by Heller et al. (US Patent 5,632,957) has been withdrawn in light of applicant's amendments of claims 83, 104, 108, and 112, and cancellation of claims 96, 97, 105, and 109.

26. The rejection of claims 83-94, 96-97, 99-101, 103, 106 and 108-112 under 35 USC 102(e) as being anticipated by Buck, Jr. et al. (US Patent 6,294,062 B1; *filings date of 6/1/1998*) has been withdrawn in light of applicant's amendments of claims 83, 104, 108, and 112, and cancellation of claims 96, 97, 105, and 109.

27. The rejection of claims 83-104, and 106-113 under 35 USC 103(a) as being obvious over Song et al. (US Patent 5,567,302) and Han et al. (US Patent 6,268,161 B1) has been withdrawn in light of applicant's amendments of claims 83, 95, 104, 108, and 112, and cancellation of claims 96, 97, 105, 107, 109, and 111.

28. The rejection of claims 83-101, 103-105, 107-109, and 111-113 under 35 USC 103(a) as being obvious over Heller et al. (US Patent 5,632,957) and Han et al. (US Patent 6,268,161 B1) has been withdrawn in light of applicant's amendments of claims 83, 95, 104, 108, and 112, and cancellation of claims 96, 97, 105, 107, 109, and 111.

29. The rejection of claims 83-97, and 99-112 under 35 USC 103(a) as being obvious over Buck, Jr. et al. (US Patent 6,294,062 B1; *filings date of 6/1/1998*) and Han et al. (US Patent 6,268,161 B1) has been withdrawn in light of applicant's amendments of claims 83, 95, 104, 108, and 112, and cancellation of claims 96, 97, 105, 107, 109, and 111.

Response to Arguments

30. Applicant's arguments with respect to claims 83-113 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Chau T. Tran whose telephone number is 571-272-0810.

The examiner can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mct
June 6, 2005



PADMASHRI PONNALURI
PRIMARY EXAMINER